

THE MINING AND METALLURGICAL JOURNAL.

Vol. XVII., No. 12

LOS ANGELES, CAL., September 15, 1897.

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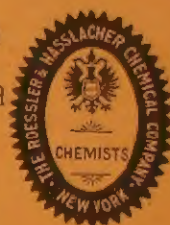
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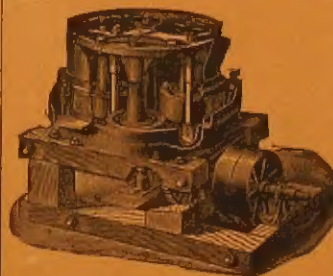
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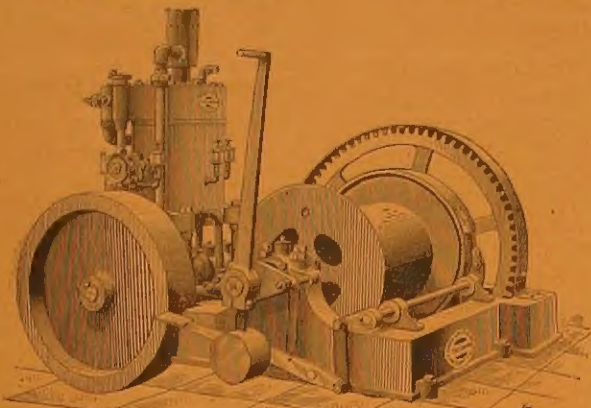
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ALPHABETICAL INDEX TO ADVERTISERS

A	F	L	R
Abbott, W. O. 3	Ford, R. E. 5	Lassell, T. J. 20	Reed, John T. 2
Agramonte, C. H. M. Y. 5	Forshaw & Co. 24	Lacy Manufacturing Co. 18	Ridlon Iron Works 26
Alinworth, Wm. 25	Fuller, G. C. 26	Leffel & Co., James 24	Rix Compressed Air Machinery Co. 2
Allis Co., Edward P. 1	Fullon Engine Works 28	Leonard & Hill 24	Roebling's Sons Company, John A. 18
Alphabetical Index to Advertisers 1	Fraser & Chalmers 21	Lexow, Theo. 4	Roswell & Haslach Chemical Co. 1
Angels Iron Works 21	Frue Ore Concentrators 21	Lloyd, B. T. 17	Russell, Geo. 23
Anti-Corrosive Co. 24	Fruehling, Wm. A. 22	Lowergan & Calkins 17	Russell Process Co. 1
Aubrey, L. E. 22		Los Angeles Business College 20	
Austin Bros. 22		Los Angeles Windmill Co. 19	S
Axelsson Machine Co. 2		Luckhardt, C. A. 18	Sanders & Jones 24
	G	Lynch, Jno. 20	S. P. Pioneer Screen Works 24
B	Garbutt, P. C. 21		Schaw, Ingram, Batcher & Co. 24
Baker Iron Works 20	Garratt & Co., W. T. 23	M	Schellings & Sons, Adam 24
Best Manufacturing Co. 20	Goldman, H. 3	Mait, J. 20	Selby Smelting & Lead Co. 16
Bi Metallic Assay Office 21	Gold & Silver Extraction Co. of America 1	Masters, J. H. 20	Shepherd, Wheeler & Rhodes 20
Birch & Co., W. H. 24	Orinwood, Chas. P. 6	Matteau Manufacturing Co. 19	Smith, S. J. 20
Booth & Sons, L. 2		McLean & Co. 19	Smith & Irving 20
Booth & Co., C. E. 27		McLew Ore Concentrator 20	Sou. Cal. R. R. 20
Bradley Pulverizer Co. 6		McLutosh & Wolpman 20	S. S. Machinery Co. 20
Braun & Co., F. W. 6		Meat Market 20	Standard Fire Brick Co. 20
Brown, M. E., Homee P. 20	H	Michigan Mining School 21	Standard Iron Works 20
Burlingame, E. E. 20	Hallawell, E. L. 24	Miner & Smelter Supply Co. 21	Star Boiler & Sheet Iron Works 4
Byron Jackson Machine Works. 8	Hanks, Abbott H. 24	Miners Assay Office 2	State Ore Sampling Works 23
	Harrington & King Perforating Co. 6	Mining Rock Quotations 20	
C	Heckelmann & McCann 16	Montague, W. W. 21	T
Cagwin, A. S. 24	Hercules Gas Engine 16	Montgomery Machinery Co., J. H. 20	Taylor & Co., John 24
California Perforating Screen Co. 24	Hendy Machine Works, Joshua 6, 21 & 28	Morgan & Co. 20	Thompson & Boyle 24
California Wire Works 21	Hendrie & Bolthoff Manufacturing Co. 25	Morris Rock Breaker and Ore Crusher 22	Thomson, J. B. 18
Carr, D. P. 1	Hersey, Clarence 25	Murray Iron Works 28	Truxx Manufacturing Co. 5
Chauvenet & Brother, Regis. 8	Heer, Peter 20		
Chicago & Aurora Smelting & Refining Co. 24	Hogee, Wm. H. 21	N	U
Chicago School of Assaying 17	Hoyt, Geo. F. 21	Neiden Judson Drug Co. 20	Union Gas Engine Co. 2
Chrome Steel Works 17		Nelson & Co., H. L. 20	Union Hardware & Metal Co. 21
Cobb & Henselmeyer 17		Nelson & Smith 20	Union Iron Works, S. F. 4
Colorado Iron Works 19	I		V
Cook, Fred R. 20	Incorporated Mines 22	Oakland Iron Works 16	Van Der Nallie, Jr., Prof. 20
Collins Manufacturing Co., F. P. 24		O'Bannon, J. C. 20	Von Shults & Low 3
Compania Industrial Mexicana 22	J	Ohlandt & Co., N. 20	Vulcan Iron Works 27
Consolidated Pipe Co. 8	Jeffrey Manufacturing Co. 6		W
Con. Kansas City Smelting & Refining Co. 1	Johannesburg Sampling Works 20	Pacific Mining Machinery Co. 5	Wade & Wade 22
	Johnson, F. M. 17	Pacific Optical Company 2	Washburn & Mosen Manufacturing Co. 19
D	Jones & Jones 24	Paraffine Paint Co. 20	Watson, R. N. 24
Dennison, E. C. 21		Parke & Lacy Co. 20	Weber Gas and Gasoline Engine Co. 23
Denver Fire Clay Co. 27 & 28	K	Pelton Water Wheel Co. 21	Weigle Pipe Works 23
Denver Public Sampling Vias 26	Kempton, C. W. 5	Pennington & Sons Co., Geo. W. 1	Western Chemical Co. 17
Denver & Rio Grande Railway 26	Kerr Co. Assay Office 24	Perkins Pump and Engine Co. 26	Western Forge & Rolling Mills 17
Dee & Co., Thos. 26	King, J. Q. 23	Petter, J. W. 26	Whendley, G. 5
Dickman & Mackenzie 26	Kratzner, A. 4	Pollock, James A. 21	White Rogers & Co. 19
Doub, D. M. 22	Krogh Manufacturing Co. 18	Prie & Son, Thos 24	Wigmore & Sons Co., J. 3
Dow Steam Pump Works 4		Pueblo Foundry and Machine Shop 26	Wilson, J. Howard 4
Drake, Dr. F. W. 18		Pueblo Smelting & Refining Co. 27	Winans, J. C. 24
Ducumoulin, C. 25		Puget Sound Reduction Co. 24	Woodard, Wm. 26
			Woodbury Concentrator Co. 26
E			Woodward, E. C. 20
Eager & Co. 6			
Emanuel, Wm. H. 2			
Eudlich & Hoyt 21			
Evelith & MacLynou 20			

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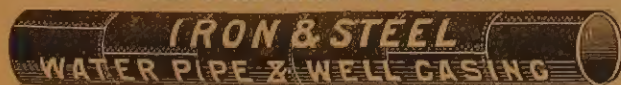
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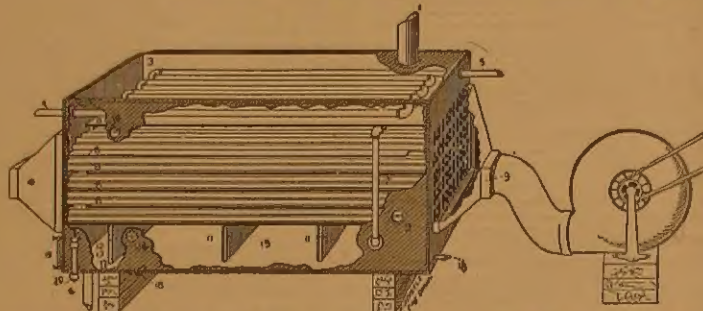
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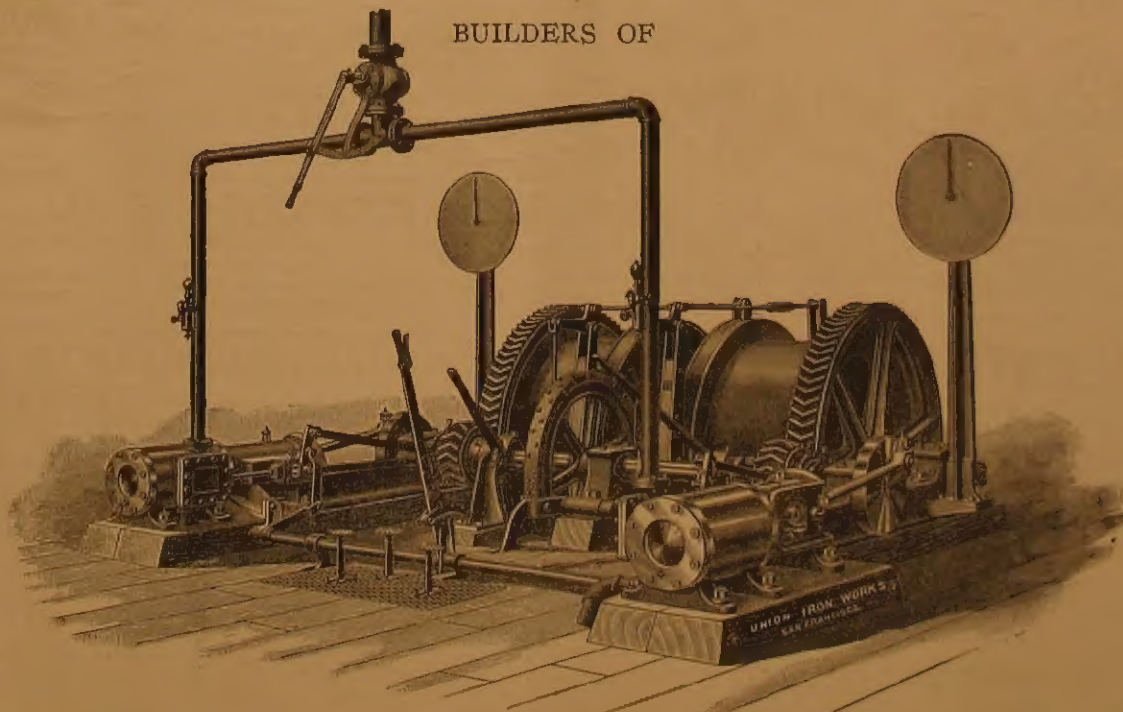
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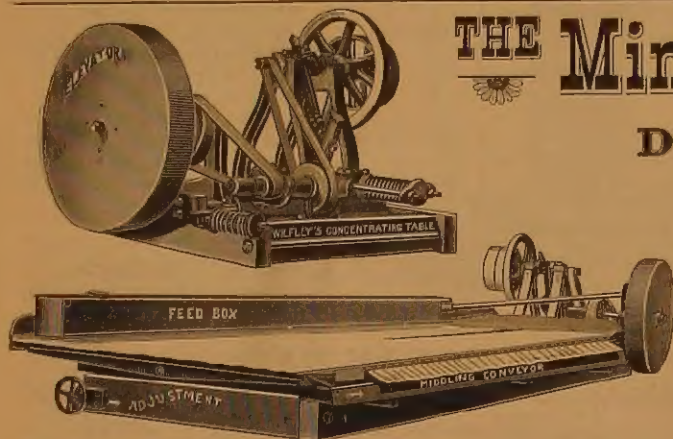
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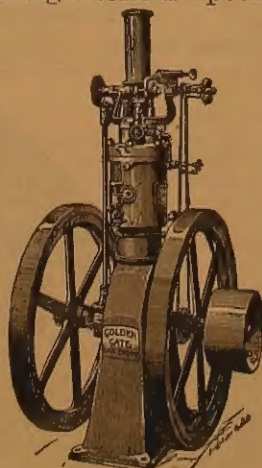
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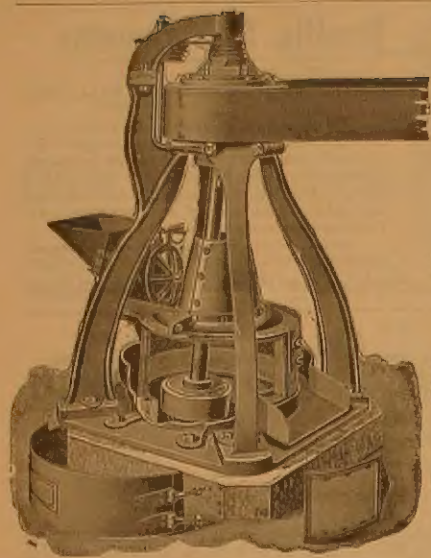
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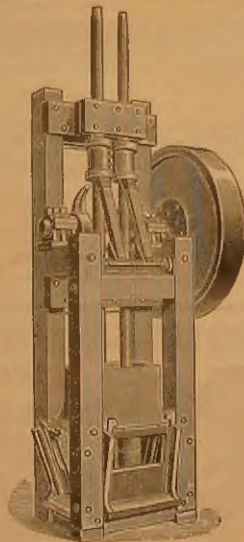
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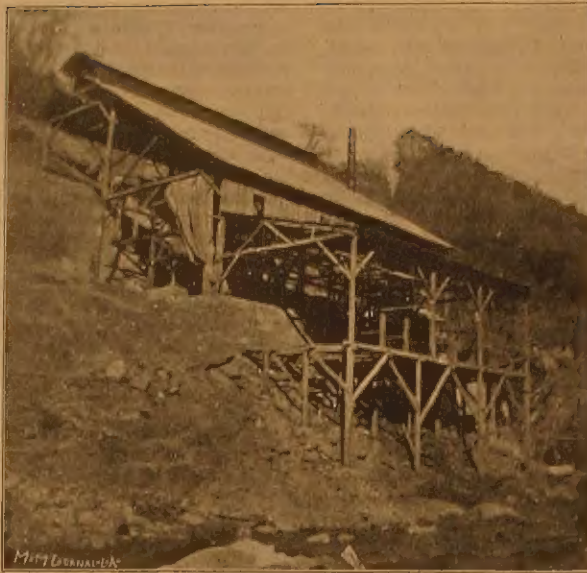
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MILL OF SANTA GERTRUDIS MINING AND MILLING CO.,
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SANTA GERTRUDIS MINE.

Among all the mines that have been discovered, and on which development work has been commenced in the last two years in Mexico, none look more favorable than the Santa Gertrudis.

It is located 110 miles east of Mazatlan, in the state of Sinaloa, and 50 miles from Rosario, where the famous Minas de Tajo are located. The discovery was made by G. E. Ward, and denounced in Jan. 1896. He conveyed a controlling interest to a company in March of the same year. After doing some prospecting, a ten-stamp mill was erected in June, 1896, and commenced operations Jan. 1st, 1897.

The location is very favorable for cheap milling, the Baluarte river, on which the mill is located, is one of the most important streams in southern Sinaloa, and a project is now on foot to arrange for running the mill by water power. One of the chief difficulties encountered was transporting the ore from the mine to the mill. The distance is only one mile, but the mine is 600 feet higher than the mill, which necessitates pack animals. A good trail, which is shown in the illustration, was built to the mine at an expense of nine thousand dollars, and the trip is now made in one hour. The ore is oxide of iron, carrying \$25 in gold and two ounces in silver.

All the machinery for the mill, as well as everything used in the camp, is packed from Rosario on mules. The company also purchased twenty-seven square miles of timber land, much of which is mahogany. All the timbers in the mill are of this wood. Two Kinkead mills and a new crusher were recently added to the plant, and commenced operations Aug. 15th, 1897. The Kinkeads are reported to be doing good work. The mill has been crushing 600 tons of ore per month, that will average \$25 in gold. The development on the mines consists of over 2000 feet in tunnels, drifts and shafts. The width of the vein has been from 4 to 12 feet. In the San Jose tunnel, 180 feet below the

surface, the vein averages 12 feet in width. The lowest workings have attained a depth of 220 feet. The vein is perpendicular. The formation, as far as has been ascertained, is porphyry. In the Santa Rosa tunnel, 2000 feet from the main workings, a tunnel has been run 175 feet to the vein and exposed a body of ore 4 feet wide.

The lode extends across the chain of mountains, and has been opened up at various places on the twenty pertenencias owned by the company. Another lode has been discovered, running parallel, about 500 yards to the southwest, on which ten pertenencias have been located and on which work will

soon be commenced. Within the last month, good ore has been found a short distance from the mill, on the river. The altitude of the mine is 2300 feet, while the mill is 1700.

The milling results have not been entirely satisfactory, as it was apparent that the process in use did not save 40 per cent of the gold, and the services of Mr. Leon Bolandard, a French mining engineer, were secured, and he demonstrated that 85 per cent of the value could be recovered, by roasting the ore before crushing it. This seems to be the desired panacea for saving the values, and it will probably be adopted by the company.

The bullion is shipped to the Nevada Bank, in San Francisco, where most of the supplies are purchased. The majority of the stock of the Santa Gertrudis mine is owned by residents of Los Angeles, and they are satisfied that with further development the mine will take its place among the great producers of the Republic of Mexico.

SAVING SULPHURETS IN GOLD MILLS.

The methods employed for saving sulphurets in gold mills has undergone but little change for many years until quite recently, which is the more remarkable since a number of persons have been almost exclusively engaged in trying to perfect mechanical contrivances to accomplish the profitable saving of them.

The treatment of sulphurets after concentration has been modified in some localities, by the introduction and substitution of the cyanide process for the chlorination method of roasting and precipitation, also in using mechanically stirred furnaces instead of the usual reverberatory hearth worked by hand; but, generally speaking, the old methods have not been materially changed.

It must be confessed that the inventors or adapters of concentrators have shown but little originality for the work accomplished by them seems to have consisted almost wholly in copying each other as nearly as possible, resulting in the introduction of a



TRAIL FROM SANTA GERTRUDIS MINE TO MILL.

number of machines, all very similar in a general way, but differing somewhat in the details of construction.

These machines are known to the public as the *Frue*, *Woodbury*, *Johnston*, *Hendy*, *Union*, *Ellis* and *Springer* concentrators, and a few others of the same class, consisting of a slowly moving endless rubber or canvas belt, having a side or end shake.

These concentrators turn out a product very imperfectly separated from the sands or silica of the quartz crushed in the battery, and require close and intelligent attention while in operation, in order to avoid serious losses of valuable sulphurets, and especially of the fine slimes, which usually carry the most valuable metals, sometimes float gold, not caught in the mortar or by the copper tables outside of same.

What this loss amounts to would astonish mine owners, could they be truthfully informed, but in most instances the actual losses occasioned by poor concentration and and poorer management is enough to more than pay the cost of mining and milling.

Belt concentrators, similar to the kind mentioned, were first used and discarded in Germany and Austria many years ago, long before their introduction to this country. The original *Frue* machine was a close copy of the German contrivance, and, since its introduction to the United States, all improvements in the construction of them has had to do with changes in the material and structure of the endless belt, and the mechanical contrivances used for regulating the speed and shaking motion, the general operation of the machines and the results obtained has made little or no advance, nor are they ever likely to, as they only mark one improvement over the old style sluice, riffle and blanket.

In Europe, where the close and economical concentration of low grade, galena, copper and other ores has been reduced almost to an exact science, concentrators of the belt type find no place.

Hartz and Clausthal Jigs, Hydraulic sizers, Rittengen percussion, and the various types of slime tables and buddles are generally used for both coarse and fine concentration, doing a class of work which any style of belt concentrator would be totally inefficient to accomplish.

In the State of Colorado they have recognized the imperfect, not to say crude, methods and results of concentration with all kinds of belt machines to some practical purpose, for they have there perfected a machine to supersede them, which has proved so much superior to the belt concentrator that, wherever the new device is introduced into a milling plant, the belt machines are usually discarded as practically useless.

The apparatus herein referred to is known as the "Wilfley concentrator," consisting of a flat table, 7 feet x 16 feet, resting upon rollers, perfectly adjustable as to incline, and having a peculiar movement quite unlike that of any other machine.

The operation of this concentrator is extremely positive and effective. The adjustments are few, simple and convenient.

The sulphurets are kept constantly submerged, and are not therefore subjected to loss by exposure to the air during the process of separation from the gangue or silica of the quartz crushed, (a very important feature frequently overlooked by millmen) and the capacity ranges from 20 to 50 tons per day, depending upon the character of the material treated, which means that one of the Wilfley concentrators will do more effective work and

far better service than three or four 4 feet, or two or three 6 feet belt machines, of any style or pattern, and a great saving in cost of operation, requiring only from 1 to 2 H. P. to run it, and consequently effecting a large saving in space, power and first cost, in many instances making it possible to work a mine at a profit when, with poorer appliances, it would be impossible.

This machine represents the only practical improvement in concentration that has been developed since the *Frue* concentrator was first introduced into this country many years ago, and because it is such a valuable addition to the money-making appliances of the modern up-to-date milling plant. No wide-awake mining company can afford to ignore these machines in the operation of any mill in which the sulphurets are worth concentration and saving, and the closer this statement is investigated the more apparent will its force and truth appear.

E. B. ROGERS, M. E.

CORRESPONDENCE

CALIFORNIA.

On the Desert at Garlock.

Parker & McConnell, whose mine is south of Garlock, have bought the McKiernan mill and leased the Henry & Co. mill, both of which they are running day and night. Their vein is very wide and ore is mined for 50c., hauled for \$2., and mills \$12 to \$18 per ton.

The Ballarat stage is taking a great many people to Panamint lately, and especially since the very hot weather is over. Ballarat itself is getting to be quite an important little town, demanding a school and post office.

F. H. Heald has sold his gold mines near this place to the Cavil Gold Mining Co., of Yuma, for \$1,000,000 in stock, and the property is to be developed at once. It is located by the coal mines, and has a good water supply.

It is reported that the Rand Mining Co. are making plans for a 60 stamp mill at Garlock. The question of water is no longer doubtful, as all the mills are prepared to use the water over and over when necessary.

Dr. Webb has sold a one-third interest in his mine to the inventor of the Huntington mill for \$30,000, and five of those mills are to be put in here.

All the big teams are busy, and a half-dozen more fourteen to twenty-mule teams could find employment hauling ore to the mills.

OLD COR.

TUOLUMNE MINING NOTES.

THE WOOSTER AND CRÆSUS MINES.

both on North Fork of Tuolumne River—both old mines—now being reopened. The veins are large, and have paid near the surface \$40 to the ton.

THE PENNSYLVANIA MINE.

A very rich strike has been made in this mine at the bottom of an old shaft. A new hoist is being erected. Active development is now in progress.

THE CARLOTTA.

At this mine a new hoist has been put up, and work of opening up the mine is proceeding rapidly. Rock worth from \$14 to \$20 per ton.

WHEEL RUFF.

Very rich rock is being extracted from this mine—almost equal parts of gold and quartz. The vein is 18 inches wide, value from \$500 to \$1000 per ton. This is an extension north of the Soulsby mine or Wheel Penan. The sulphurets assay very highly, in places a heavy percentage.

THE DRAPER

is running full blast. Rich ore has been struck just south of main shaft at the 300-foot level.

THE JUNCTION.

This mine improves daily as developments are made—veins increasing in size and quality.

BLACK OAK.

Main shaft nearly 800 feet deep. The ore chutes are very long, nearly 400 feet. The drift at No. 10 is being cut out 16-foot wide, and no wall in sight. The vein carries a large percentage of sulphurets of high grade. The mill reduces 25 tons of ore daily. 200 tons of selected ore is shipped monthly to Selby & Co., of San Francisco. The new 7 drill compressor is doing satisfactory work. Henceforth the output of ore will be materially increased. The product of bullion from this mine monthly is very large.

THE GOLD BUG

have sunk 50 feet in new shaft. The vein is of exceedingly high grade, shaft 8x4 in clear, inside measurement of timbers. A hoist will be immediately erected when sinking will be resumed.

Middle Belt.

GOLDEN GATE.

A cyanide plant is being put into this mine to work the tailings. The chlorination plant is at all times in full operation. The 20-stamp mill crushes regularly day and night.

THE OLD VIRGINIA

is pumping out the water from shaft. Repairs to hoist and water wheels being finished. An old tunnel has also been cleaned out—showing a fine vein. This mine will, when put into shape and connections made with main vein, a distance of 200 feet to drift, disclose rich ore that will be equal to any mine in the county, as far as richness is concerned—judging from surface assays, etc., of very high values.

Mother Lode.

THE SANTA YSABEL GROUP.

A find of about \$50,000 was taken out in the Mascot mine. The rock was one mass of gold and taken from the 200-foot level.

The mines all along the line are reported to be extracting rich pay rock. The mills are all running on full time. The general clean-up from the various mines aggregates into the hundreds of thousands of dollars.

The Shawmut and Eagle, Santa Ysabel, Jumper, App, Dutch, Rawhide, are among the heaviest producers.

SHAW'S FLAT.

A very rich discovery was made this week at Shaw's Flat, 2½ miles from Sonora. \$20 to pan was washed out of the gravel. The find, more strictly speaking, is near to the old Caldwell diggings—from which fortunes were taken in the early days. How extensive this find is, it is too early to predict yet, but so far it is a regular Klondyker.

A considerable number of mining deals were consummated this week. Many propositions changed hands—both mines and real estate. The influx of people is steady. Prosperity reigns supreme all over the country.

ARGUS.

RECENT METHODS OF ORE TREATMENT.

NUMBER II.

Written for the "Mining and Metallurgical Journal."
BY P. M. ENELICH.

LEACHING.

Within recent years, the ascendancy which cyanide solutions have obtained and maintained have caused other, similarly effective, metal solvents to be almost lost sight of. Prominent among these latter are chlorine, or modifications thereof, and they have for a long time past held a preëminent place. The efficacy and promptness of response of this element, and some of its compounds, in converting given metals into either soluble, or otherwise readily extractable combinations, has heretofore been handicapped by the difficulty and expense attending its production. Within a short time since, however, it has been found that brine (solution of sodium chloride in water) could be decomposed by suitable application of electric agencies in such a manner as to yield free chlorine at small cost. While this discovery has not, as yet, received the attention to which its vital importance entitles it, it has been applied lately upon a commercial scale by Mr. Porter of Los Angeles, California.

Mr. Porter's inventions open a comparatively new field for investigations and ore-reduction, and are well worthy of being brought before those who are technically or commercially interested in the extraction of precious metal values from the ores containing them. A description of the inventor's process and machinery must of necessity be brief and, perhaps, somewhat unsatisfactory, but sufficient data can be given to afford a general idea of the results aimed at.

Before proceeding further, it may be well to state that while the process in question by no means claims to be exclusively a cyanidic one, yet applicable cyanide solutions may be used to advantage. In a general way, the use of a "barrel," a cylinder with square ends, with the assistance of electricity in proper form, and the use of chemical solutions may be said to constitute the essence of the inventions. Two classes of these "barrels" are used, the one for ordinary ore-pulp, the other for slimes or slimy pulp.

1. *Ordinary Barrel.* This barrel is usually constructed of steel, 6 feet in diameter, 7 feet long, and takes a charge of 7 tons, which is expected to be ready for discharge within a maximum of 5 hours, dependent upon the physical and chemical character of the pulp. To this charge of 7 tons of pulp is added a charge of $3\frac{1}{2}$ tons of an aqueous solution of sodium chloride, caustic soda and potassium cyanide, the strength of the solution depending upon the gold and silver contents of the pulp.

The inner surface of this barrel is lined with copper and the latter is amalgamated. Along the barrel shaft the electricity (see below) is conducted to electrodes to which the pulp in suspension has free access during the eight revolutions which the barrel makes per minute. These electrodes move with the barrel and are of extensive surface, being placed within about six inches of the copper lining. The chemical action apparently

would consist primarily in the liberation of chlorine gas, the partial decomposition of water, the formation of gold and silver chlorides in an alkaline solution (due to the presence of free caustic soda), an incomplete or total conversion of these chlorides into cyanide salts, (if cyanide is present in the solution) a precipitation of the latter by contact with the metals of the machinery, or substances in solution, and a direct or secondary amalgamation thereof. Such or similar reactions and fully satisfactory results therefrom, are claimed to have been obtained both in the laboratory and in practice. At the works erected by the Argus Gold Mining Company, a saving of 96 per cent is quoted on an ore containing from \$20 to \$25 in gold and from 3 to 4 ounces silver per ton.

The removal of the amalgam from the interior of the barrel is a simple matter, and requires but ordinary methods for the eventual production of bullion.

2. *Filler Barrel.* In this invention Mr. Porter has made a decided departure. Speaking broadly, he has constructed a centrifugal filtering machine, operating horizontally, with lateral discharges. This appliance is intended to handle pulp that is very slimy, or of such fineness as to remain usually in suspension for a long time. In form it is essentially the same as the preceding, but smaller, being four feet in diameter, five feet long, with a capacity of from one to three tons per hour. The finer the slimes, the smaller the capacity. This barrel revolves on a hollow shaft at the rate of 700 revolutions per minute, obtaining, as stated, a pressure of about 150 pounds per square inch on its inner periphery, which is lined with amalgamated copper. The shell is of steel and supplied with an efficient inner filter, which consists of—beginning at the shell—a coarse metal screen, cocoa matting, canvass, burlaps, and a fine screen. In case acid solutions should be used, then asbestos fabrics are substituted for the fibrous ones. There are 60 square feet of such filter-surface.

Within the barrel, and attached to the hollow shafting along which the electric current is introduced, are the carbon anodes, distant five to six inches from the inner copper-lined and amalgamated shell, and between the two the current passes through the solution containing the desirable metals. The chemical metals is supposed to be essentially the same as described above. By virtue of the high rate of speed maintained, the free mercury is thrown to the inner periphery, and the cleared solution is forced in the same direction. Thence the latter, after partial amalgamation, is discharged by means of plug holes, and further treated if desirable. Washwater is subsequently introduced through the hollow shaft and similarly discharged. Such metal compounds as may be susceptible to amalgamation and have passed the filter are then found in the inner side of the shell. This latter can be cleaned by the introduction of an excess of quicksilver, and a consequent "washing" of the amalgamate surface, or by withdrawing the filter bodily and removing the amalgam in the usual manner. After the process has been ended the waste-pulp is discharged through the manhole.

An important modification of this machine is that, by withdrawing the electrodes, and either maintaining or increasing the rate of revolutions, a very efficient centrifugal filter is produced for certain slimes or for precipitates derived from various hydro-metallurgical processes. In the latter cases, where the residue would be the desirable portions to

save, (instead of the filtrate) a slight change in the construction of the filter would readily accomplish the requisite purpose.

Concerning the strength of electricity which may be required, the inventor furnishes the following figures: as high as 5 amperes per square foot of electrodes may be required; the voltage ranges from 1 to 3; a machine of 300 amperes capacity will amply suffice for a one-barrel plant of 25 tons per 24 hours. (Note.—In the larger barrel about 100 square feet of electrode surface are figured; in the smaller one, about 40 square feet).

Several 30 ton plants, based upon the above method, have been erected, and others are now either in course of construction or in contemplation. It is understood that a corporation has recently been formed to prosecute the introduction of this system of ore-treatment more vigorously.

Essentially, the process may be described as an electro-chlorination, with incidental amalgamation, or other suitable method of treating the product obtained. There can be no question as to the desirability and efficacy of the "filter barrel" for a variety of purposes, and it seems as if this might fill a long-felt want. At any rate it is to be hoped that the anticipations of the ingenious inventor may be realized to the full; all the more as his experiments, noted above, show an unusually high rate of extraction, and as it is claimed that the application of his method on a standard scale, of about 30 tons per day, will exceed the normal cost of free milling and ordinary concentration by only about 15 to 50 cents per ton, figuring extreme cases in each instance.

Miscellaneous Mining News.

CALIFORNIA.

KERN COUNTY.

Alameda Mine.

The owners of the Alameda mine, at Johannesburg, incorporated under the laws of California, September 1st, by the name of the Alameda Gold Mining Company, for \$500,000, at a par of \$1, all paid up. The officers and directors of the company are:

J. W. Ragsdale, President;
K. Hamilton Sim, Vice-President;
Geo. W. McPherson, Secretary;
William Sim, Treasurer;
Wm. H. McEwen, Superintendent.

They have six shafts down on the Alameda. No. 1 is down 90 feet on a two and one-half foot vein of \$25 rock, with about 50 feet of drifts and cross cuts. No. 2 shaft is now down 40 feet, with fully two feet ore that mills \$40 per ton. No. 3 shaft is down 50 feet, with three feet of good pay ore in the bottom. No. 4 is second in depth, it being 70 feet, with three feet of \$50 ore in sight. No. 5 shaft has reached 60 feet, on a ledge of low grade ore, three feet wide. Work is being steadily pushed on this shaft, with a day and night shift.

Hallowell and Riggins have a contract sinking on No. 6 shaft, and have it down about 35 feet at the present time. The width of the ledge has not been ascertained as yet, but it is very large and of low grade.

J. H. Underhill bought the Belladonna mine from D. J. McCormick and Clyde Kuffel last week for \$500. The claim lies out on the Kramer road, this side of the Black Hawk,

and is a fine prospect. A ledge, two and a half feet wide has been discovered on it that horns well throughout, and there is about eight inches of it that is very rich, every piece taken out showing free gold. The work of developing the ledge will be taken up immediately, and all indications point to the opening of a mine.

Articles of incorporation of the Randsburg Placer Mining Company have been filed with the County Clerk at Bakersfield, with a capital stock of \$1,000,000, of the par value of \$1 per share. The incorporators are J. M. Bracewell, Jo. P. Carroll, D. C. Kuffel, S. H. Reynolds and W. H. Hevren. The company was organized for the purpose of operating a group of eighteen placer claims, comprising 360 acres, lying about two and a half miles southwest of town.

The Little Butte is making a shipment of ore to the mill at Cuddeback Lake.

The stamp mill which is soon to be erected at Johannesburg is now being constructed at the foundry, and work is being pushed as fast as possible.

The upper shaft of the Val Verde, at Johannesburg, is now down 240 feet. At present they are working on the lower shaft, where now they are taking out \$200 ore.

Frank Cole, who is putting up a concentrator for the Alameda at Johannesburg, has bonded the G. B. mine, owned by McCormick, and will begin work upon it this week.

Up around Tehachepi considerable miningwork is being done, both gravel and quartz claims paying.

The Durnul quartz mine, near Piute, will soon put up a mill.

LOS ANGELES COUNTY.

Red Rover Gold Mine.

This mine is conveniently situated 3 miles northerly from Acton station, on the Southern Pacific Railway, 55 miles from Los Angeles. The altitude at the mine is 3300 feet above sea level, and, consequently, mild and healthy. The mine is worked by an incline shaft, about 700 feet deep, and has levels opened east and west at almost each 50-foot station.

A vertical shaft, 400 feet deep, on the Logan claim, which adjoins it on the northeast, is connected by a 350 feet cross cut to the 400-foot level of the Red Rover mine, and furnishes a shaft of good air for healthy conditions in the mine. A ten stamp mill, 400 feet from the shaft, crushes 15 tons of ore per day. A pumping plant at Acton and water tunnels furnish water for the mine, mill and camp.

We print in this issue a cut showing the vein in an overhand stope above the 200-foot level, which is one of the best underground flash-light photographs we have had the good fortune of obtaining, to show the advantages of photography in illustrating underground work.

A company has been recently organized by Henry T. Gage and Senator Stephen M. White, attorneys-at-law; Earl B. Miller and

others, of this city, and this mine and three adjoining claims, the Logan, Earl and Topeka, are to be vigorously operated.

RIVERSIDE COUNTY.

Messrs. Sears, Hickley and Wilson, proprietors of the Lake View Gold mine, five miles east of Elsinore, are going ahead with their work of development. They have now a tunnel in 160 feet, and caught the vein of a large body of low grade ore—\$10 per ton—on a cross cut of 150 feet. It shows up 90 feet between the walls.

It is reported that Jim McHaney and his brother William, discoverers of the Desert Queen mine, west of Banning, have made a rich strike in the Pinon district, near Twenty-nine Palms, the ore going over \$700 per ton in gold.

The *Riverside Globe* says: B. F. Body has disposed of one-third interest in his group of valuable mines in the Eagle Mountain district to Chas. H. Briggs. The group consists of the Gray Eagle, Waterloo, Blue Bird and Corn King mines. This property is situated about eighteen miles northerly from the Granite mine owned by Riverside parties.



STOPE IN RED ROVER MINE AT ACTON, CAL., SHOWING VEIN

Henry Coon has proved his faith in Riverside county mining, by purchasing from Chas. H. Briggs all his interest in the mining claims known as the Contention, Oro Fino, Twin, Big Four and Dollar Mark. These mines are situated on the east side of the Eagle Mountains and about four miles north-east of Buzzard Springs.

S. D. Chittenden, Southern California manager, and Louis E. Repogle, vice-president of the bankers' alliance of California, are becoming interested in the Corn Springs district, in the Chuckawalla range of mountains, and this week with the County Recorder a notice of location on the Alliance mine was filed.

M. L. Wicks, a Los Angeles attorney, and F. A. Stephens have filed notices of location on the Income, Enterprise and Index mines in the Menifee district.

Chas. Hawtrey, of Los Angeles, has added to his interests in the Pinon district, by recording notices of the Bombay and Madras mines in that district.

H. R. Adams et al. have located a claim in the Corn Spring district.

A rich strike is reported to have been made by R. H. Beall near his home at Leon, in Riverside county. Rock from the mine assays upwards of the fifty dollar mark.

Work on the Hemet Belle mine is being pushed rapidly by the new management. Mr. Hansen, who recently purchased the property, was in the city a few days ago and he is well satisfied with the outlook at the mine.

H. E. Tallant, a promising mining man, merchant and justice of the peace from Indio, was in Riverside last week.

SAN BERNARDINO COUNTY.

An English syndicate has acquired ownership of 320 acres of auriferous ground in the Hocumac placer district, San Bernardino county, and have spent about \$90,000 for a hydraulic plant to work it. When they started up last year it made the waters of San Antonio canyon so muddy that they were enjoined. Under the new law they have been permitted to resume operations under certain restrictions as to time, and brush dams have been put in to protect the users of the canyon water.

COLORADO.

Cripple Creek Notes.

Sixty-five tons of smelting ore were shipped last week from Carl Johnson's lease on the Half Moon. The ore came from the new chute recently opened in the lower level, where there is four feet of sylvanite. The ore came from the breast of the two drifts, and from the winze. No stoping has yet been done on the ore body.

Lamberton and Stevenson are working the old Anderson lease on the Lucky Corner. A 70-foot winze was sunk by former lessees about 40 feet from the mouth of the tunnel, and from the bottom of this winze a drift was run on the vein. The lessees are now pushing this drift hoping to open up the extension of the ore chute opened by Hoskins and Keith, on top of the hill in the Mountain Monarch.

Jesse Vandenberg has taken a lease on the Bogart on Raven hill. There was an old 30-foot shaft on the property, and he began prospecting this. One round of shots in the wall opened up 30 inches of ore, which yields assays of \$20 per ton.

The Hartzell mill is now running full time, and the management expects to run it continuously in the future. A thousand tons of ore are now ahead, with more to come. During the recent stop, the machinery was thoroughly overhauled and repaired. J. C. Chamberlain has severed his connection with the mill, Mr. Hartzell assuming his duties.—*Mining Investor*.

Pine Creek News.

A small shipment of ore from the Nancy Hanks tunnel was shipped to Black Hawk this week as a test lot.

The Fourth of July tunnel is now in 220 feet, and is showing up better than ever. It is a cross-cut tunnel, being run to cut the Lillian group on Utah hill, and is being operated successfully by its owner, Charles Werdenhoff.

Purdy & Andrews have put in a car and track in their London tunnel on Utah hill, and preparations are being made for active development right away.

A small pump has been placed in the Nancy Lee property on Ingham Hill, as of late there has been an increased flow of water in that property. Development work is still being prosecuted with more encouraging results than ever.

Fairplay.

The Dauntless mine, located a short distance from the famous Hilltop mine in Horseshoe and which has lain idle for a number of years, has again become a large producer. A short time ago a lease and bond was taken on this property by Fairplay parties and after a small amount of development work a large ore body has been uncovered. It is silver and lead—lead predominating. This is an entirely different ore body from the one which shipments were made some years ago.

The Last Change property, owned by the Hilda Mining company, of which Messrs. Sheedy & Kountze of Denver are principal owners, some time since started a tunnel entirely separate and some distance from their old workings. They have got on the contact and developments seem to promise the continuation of their already large ore bodies.

Idaho Springs Budget.

The Gem mines, during the past month, produced a greater tonnage of ore than ever before known in the history of the district. The mill is treating the greatest amount by concentration, and it was recently overhauled and placed in shape for the successful treatment of the Gem ores. There is some smelting ore being moved.

The Standard company is now working a force of men, with Colonel J. D. Fredd in charge. The mill is doing good work and the output from the mine is all that could be expected. The ore bodies are gradually being opened up under the drifts from three air drills. It is found that the values of the mineral have somewhat improved from that first tested. It is an exclusive gold proposition.

From Copper Rock.

The shaft house of the K. T. mine in Spruce gulch was destroyed by fire; cause unknown.

Casper Widmer, who is operating the Summerville, is expected this week to return from Kansas City. The mine will resume active work at once.

The Meadow Lark's application for a patent was successful. Work will be pushed on this mine all winter, as there is plenty of ore in sight.

Thompson & Co. have erected a pony stamp mill of 10 stamps at the mouth of Potato gulch, and is running it successfully on surface quartz from the Ypsilanti.

W. Fletcher is driving an adit on the Home lode. A large body of low grade mill ore is in sight. The property is in the town limits.

IDAHO.

Idaho has one industry that is beginning to prosper. It is taking on a new growth. It is nourished by the destruction of other industries, and increases in magnitude and importance as they die out. It is gold mining. The first important discovery of gold in Idaho was made by a party led by Capt. E. D. Pierce, at Oro Fino, in 1860, says the *Butte World*. It was followed by a consider-

able influx of prospectors, and during that year and the next year, Oro Fino and Pierce City became the Meccas of gold hunters. In 1861 the discoveries at Elk City and Florence intensified the excitement and swelled the throng, and by the first of August, 1862, there were 10,000 people in Florence. Its gold fields were limited and were soon exhausted. About that time Warren's diggings and Boise Basin were discovered. Warren's was at first overrun by prospectors, miners and other fortune hunters from Florence. Boise Basin was more extensive, being about 30 miles in diameter and circular in form. Marion Moore and party reached the mouth of Moore creek, and, finding gold in the sands, followed the creek to its confluence with Elk creek, and located Bannock bar, one of the most important finds ever made in the world. Immediately following this came a rush of men, notwithstanding the fact that the rigors of a mountain winter were at hand, and no probabilities of supplies being gotten in before spring. Ophir, Wolf and Granite creeks and their numerous and incredibly rich tributaries were discovered. Their fabulous riches were heralded to the world, and the arrivals were multiplied by two, then by ten and then by twenty. Spring opened. Thousands of men found employment in their own mines. Wages were from \$8 to an ounce (\$16) a day, when help could be procured at all. Men rushed into the basin from all parts of the compass. Idaho City sprang from a few tents to a place of 15,000 inhabitants. Buena Vista Bar became a city in an equally short time. Pioneer, Centerville, Placerville, each numbered from 4,000 to 8,000 people, Placerville being the largest. Stores, hotels, restaurants, saloons, meat markets and livery stables greeted the wayfarer. Everywhere in the towns and in mining camps gambling houses of every description were openly conducted. Money was lavishly thrown away. Under such conditions a collapse was inevitable. Men who would not work for less than \$25 a day ran after new excitements, or went further into the mountains to search in vain for another Boise Basin. They didn't find it. It never has been found, and never will be. Other rich placers have been worked; fortunes have been made in many other localities; a placer miner in California has become nearly twice a millionaire from the proceeds of a placer mine; but there never has been but one Boise Basin. No other locality of only thirty miles in diameter has to its credit an output of gold exceeding 700 tons gold in the brief period of 35 years. That is the record of Boise Basin, and it is not yet emptied of its treasures. Its vast system of quartz ledges, the source of its marvelously rich placers, are practically untouched.

For the past year or two placer mining in the vicinity of Idaho Falls has not created much excitement, although it has been carried on to some extent. Last year James Stanger worked on a small scale about two miles down the river on the west side and took out about \$500. This year he has associated with him Frank Caldwell of Pocatello, and they have put in a large machine capable of working from 100 to 150 yards of dirt per day. They have now commenced work in earnest, and from all that has been done thus far, they expect to clean up from \$50 to \$60 per day. The ground where they are panning out about 50 cents a yard. They get water from the Porter canal.

The most important of changes of the past week—or the past year, for that matter—was

the starting up of the Helena-Frisco. A controlling interest in the property was sold last November, and the last day of the year the work of extracting ore was suspended. Since then from 70 to 100 men have been employed doing development work in the mine, and in making additions, alterations and improvements in the mill. Several tests of the new machinery were made last week, and the other day the mill started up to run full time. The 525 tons daily handled by the old mill will hereafter be 800 tons, the additions to the mill having made that difference in its capacity. The number of men employed during the first half of the year will be doubled from now on.

W. G. G. May, who left Florence about six weeks ago to work placer diggings near Marshall lake, returned the fore part of the week with about \$450 in gold, which he and his partner washed out since they left there. This is not bad, considering that the ground had to be fitted up before any mining could be done, and goes far to show that good diggings still exist in that section, awaiting the pick and the shovel of miners.

For some time there has been a deal pending for the Trade Dollar mine, at Silver City, Idaho. It is now rumored that the scope of the transaction has been extended so as to take in the Black Jack mine and the property of the Florida Mountain Mining Company, these being on the same vein as the Trade Dollar. The Trade Dollar was examined by Fred Corning some months ago. Recently another examination was made by F. N. Bradley, manager of the Bunker Hill & Sullivan mine, in the Couer d'Alenes. The names of the principals have never been disclosed, but it has been supposed that they were the owners of the Bunker Hill. Rumor now states that it is the Standard Oil people who are intending to purchase. The deal, according to the rumor, also embraces the railroad being constructed from Nampa to Silver City. The Trade Dollar mine is paying at the rate of \$400,000 a year, and the Black Jack is also paying large dividends. There are three mills in the group of properties. If all the mines go into the deal, the price will reach a large figure and the transaction will be the heaviest ever made in that part of the state.

MONTANA.

At Lampson reports that work on the Spotted Horse mine, in Fergus county, will be pushed on an enlarged scale. There are likely to be some developments made in the Spotted Horse gulch ere long.

Reports from Indian creek, Madison county, say S. Lowman has found some \$54 rock on the Chisler farm and William Steiner has struck quite a body of rich ore within a stone's throw of the old Virden house.

During the summer now drawing to a close a party of placer miners has been working the Missouri south of Great Falls by means of a dredge boat. Reports say that they have reaped a reasonable compensation for their summers toil.

They are putting in a concentrator at the Silver Cable in Libby. The size of their vein varies from four to 20 feet. Assays run from \$5 to several hundred dollars. The character of the ore is pyritic, carrying gold, silver and some lead. The machinery will soon be in place and they will start with about 10 tons of concentrates per day.

In the Amazone district, in Jefferson county, Holmes Bros. are about to begin development work on the Gift, recently bonded by them. The Great Northern is being worked with a good showing of copper ore.

The Elkhorn mine, according to all reports, will continue to run if silver does not go below its present price, though it is no doubt a very difficult matter to figure any dividends out of present conditions, the property undoubtedly has excellent management to run at all.

At the Harkey mine, in Dry Georgia, Madison county, the work of development is going on with Nick Trauffer as superintendent. In a short time he expects that he will be turning out 50 tons of ore per day. The property is under lease and bound to the Montana Mining and Smelting company.

Richard Locky, who recently visited Miles City, says that in a number of places on the Yellowstone river men are at work sluicing out gold on the banks of the stream, all that is necessary being a Chinese pump, a pick and Shovel and a wheelbarrow. It is said that they average from \$2 to \$3 a day.

George A. Wells and Matt Dunn of Great Falls have sold a quarter interest in their sapphire mines at Yogo to Messrs. Johnson, Walker and Tollhurst of London, England. These gentlemen were given an option on the interest early this month, which option would have expired Sept. 15. They preferred not to wait and took it up earlier than anticipated.

Mr. Thomas J. Riley, of Deer Lodge county, has incorporated the Good Will Mining and Milling company, with 2,000 shares at a par value of \$10. The property of the new company comprises eight claims lying about 12 miles west of Deer Lodge, the surface ore which runs five to eight per cent copper. Mr. Riley is an experienced mining man and evidently has a fine showing. It is to be hoped the company will soon be under headway and the prospective new copper district speedily evolved into a healthy producer.

There is considerable surprise in mining circles that the Eva May, in Cataract district, Jefferson county, is closed down. The miners were laid off on the 24th of August and the mill closed on the following Saturday. About 40 men were let out. Shipments of concentrates had been made regularly of late and it was generally supposed that the ore was getting better all the time. No reason is given for the shut down and no time set as far as known for a resumption of work. A special meeting of the stockholders is called for increasing the capital stock of the company from 200,000 to 250,000 shares at a par value of \$10 per share.

M. L. Stone, of Helena, who has been building a mill for the Garnet Mining company, which is working the Galena group of claims at Pony, says the plant was formerly a pulverizing plant, but as such was entirely unsuited to the purpose for which it was intended and has been changed to a 20 stamp mill. Its capacity will be in the neighborhood of 50 tons a day, and in speaking of that section, adds: "It is the best country I have seen. There are real signs of activity and prosperity in a mining way there. It is a coming country." The Galena company will mine the ore and run the mill with about 12 men. It has plenty of work on it to open it up and there are several hundred tons of ore the dump.

Dredging having been so successful at Bau-nack, it is being tried with profit elsewhere. Another dredge is being successfully operated

by a man named Johnson 12 miles from Avon. It differs from the dredge first put in, in that runs on a track instead of on a boat. The operators bring a drain behind it as they go, and have the dredge on a truck. Mr. Johnson believes he can work on level ground or on a gulch equally well. The dredge being talked of for the thread of Prickly Pear creek near Montana City, on the ground formerly known as the Herschfield-Carter ground, now owned by E. D. Edgerton and United States Senator Thomas H. Carter, will apply a still different principal to the process of raising the gravel. It will be by means of a large suction pump that will take the gravel clear down to bedrock and convey it to the sluice boxes, where the treatment will be much the same as in the other dredges. The Avon dredge is saving the gold and making money for its owners. The machinery for the new one near Montana City is said to be partly on the way now.—*Western Mining World*.

NEW MEXICO

Cook's Peak Items.

Jim McGeary is looking around for some property to take a lease on.

Dennis Peoples returned from Deming yesterday. He is pushing his contract on the Keiff property.

Miller & Hull are doing contract work on the Dr. Bryon property.

Cotton & McDaniel are shipping ore from the Leadville mine.

A Mexican has made a rich discovery in the quartzite.

Charles Poe has located a tunnel site. He proposes to run a tunnel under the quartzite, as it is believed by all here that there is a rich ore deposit under this formation.

Central.

The Bayard Milling and Smelting Company employs 16 men upon the Texas, Grant and Rio Grande mines in development work. The great increase in the influx of water in the drift on the 300 ft. level of the Texas mine is taken by the miners as an indication of the near approach to a larger ore body. Samples of the ore, argentite, which was found in this mine last week, assays 1143 ounces silver and two and forty-eight one hundredths ounces of gold per ton.

Mogollon.

Al Lauderbaugh is reported to have made a big strike on the old "Lilly" on Spider creek, in the higher mountains of the Mogollon range. The mine produced some very rich ore on the surface and for several years past Mr. Lauderbaugh has been running a tunnel from the base of the mountain to try and find ore in the vein at a greater depth and where it would be of easy access through his tunnel.

A big strike of rich ore is reported on the 375 ft. level of the Maud S. mine. A large piece of the ore taken from the breast of the drift on the 375 ft. level assays \$780 per ton in gold and silver.

The Confidence mine has 70 men employed and is keeping the 30 stamp mill on White-water steadily at work crushing the ore. The frequency with which the bricks of gold and silver bullion pass through Silver City, from the mill, is ample evidence of the paying basis upon which the property is running.—*Enterprise*.

WASHINGTON.

The White Rock Company has a force of men driving a tunnel on the Everett claim, in Ana Cortes gulch. The boys are in about 80 feet and have about six inches of fine looking ore. The better showing on the property is on the hanging wall, about 20 feet to the right, where there is a foot and a half of good looking mineral. This company is working on a solid basis, and only does work for which it has the money ready.

A few rods beyond the White Rock Company's work, the Great Western Company of Ballard is driving a tunnel on the Fortuna claim. They are in 25 feet and have a good showing. The whole face of the tunnel is in quartz, and about 18 inches of it is highly mineralized. This company also owns three or four other claims in the vicinity upon which they are doing assessment work.

We are told that the Cleveland, which was for a long time the cherished project of Hartman & Wilson, has been sold to Fred Brown, a practical mining man, and that he will push work on the property on a considerable scale. In connection with the Cleveland is the Violet, an extension of the Independent lead.

One of the most marvelous discoveries of mineral has recently been unearthed by the Sunset Copper Mining Company, of Everett, of which Ezra M. Egbert is president and N. Rudebeck general manager. Last June, E. M. Egbert and his brother, Arthur C. Egbert, both of whom are well and favorably known throughout the state as sturdy, enterprising young men, resolved upon a prospecting trip, and after one or two attempts to locate something in the Sultan district, concluded by the advice of Mr. Rudebeck to prospect the Trout Creek district—not more than six miles from Index, on the Great Northern Railroad.

There will doubtless be some interesting developments, as the result of this summer's work, in the Pierre Lake district, on the Colville Reservation. Claim holders have been unusually busy thus far this year, and the entire district is now pretty thoroughly prospected and staked out. Though commonly known as the Pierre Lake district, the most of this property really lies in the Bossburg district, which was organized during the spring, and has now a regularly elected recorder located in the town of Bossburg. Many of the claims have been well opened up, and some already have large dumps of ore awaiting transportation facilities. At present the only means of getting out the ore is by freight wagons to Bossburg or Marcus on the line of the Spokane Falls & Northern. This is, of course, an expensive undertaking, but it is said that in several cases the ore is of such high quality that the shipment by wagon will soon be commenced. The ore is generally a gold-bearing quartz, carrying a high percentage of copper.

Some very fine looking gold and silver-bearing ore has been brought to Seattle from the Silver Tip claim, on Ruth Creek, north of Mount Baker, located by Post and Van Valkenburg. The claim is only a short distance from the state trail, and is said to be very easy of access and easily worked. A half interest has been sold to Edward Fischer of Seattle, and arrangements made to do a certain amount of development work this year. Considerable interest is again being awak-

ened in placer prospecting along the upper South Fork and its tributaries, upon which gold in paying quantities is said to have been discovered many years ago by prospectors.

Mr. Dennis Ryan has finally secured control of the Deer Creek mines, and with ample capital, furnished by wealthy Montana men, will proceed at once to work these splendid properties, on which already \$50,000 has been expended in development work. The property has cost Mr. Ryan \$150,000, he having paid as high as 30 cents a share for some of the stock. According to the estimate made by his mining engineer, Martin Currin, \$200,000 must be expended in order to carry out the contract entered into with several of the larger holders. The first thing to be done will be to put in a 20-drill air compressor, on which work will begin early in September.

FOREIGN MINING NEWS

BRITISH COLUMBIA.

(Extracts from "Mining Record")

Boundary Creek.

Two iron-capped lodes have recently been discovered on the Golden Treasure claim, situated about three miles west of Copper Camp. One open cut into the iron disclosed the presence of a good body of well mineralized quartz in one of the newly found leads, and an assay gave returns of gold to the value of \$12.44, with good copper and silver values as well. An adjoining claim, the Aberdeen, has a fine showing of solid ore carrying a lot of copper and iron pyrite and giving assay returns that show it to be a payable grade.

The Boundary Mines Co. of New York, has again cut the ledge in the upper part of its No. 7 claim, Central Camp. Although opened at a depth of sixty-six feet, it is still very much decomposed, its silver values having been nearly all leached out by the action of water. It still carries a good gold value throughout its width of over three feet. The water poured into the shaft from the lead in such volume that nothing more could be done for the time than secure some ore for assay purposes.

At the Golden Crown, in Wellington Camp, the Jewel in Long Lake Camp, the Golconda and Last Chance in Smith's Camp, and other well known claims upon which work has been in progress for some time past, results continue to be satisfactory, the ore bodies developing very encouragingly. The winze in the Mother Lode, Deadwood Camp, is now down nearly fifty feet in the enormous deposit of ore here occurring and which has already been proved to be 185 feet in width at 100 feet below the top of the hill. The Sunset tunnel near by, is now in about 150 feet with promising indications of a ledge ahead.

The newly organized companies respectively owning the Old Ironsides and Knob Hill claims in Greenwood Camp, are continuing the work previously undertaken on these properties, and the Old Ironsides shaft, now down seventy feet, is to be deepened one hundred feet. The Boundary Creek Mining Company of Spokane, is putting men on to work the Last Chance claim in Skylark Camp. It is reported that the company recently formed to work the Winnipeg claim in Wellington Camp has \$25,000 to its credit and that a hoisting and pumping plant will shortly be placed on the claim, which for quantity and quality of ore, ranks among the best in the district.

Much more might be written, for many other properties deserving of mention have been omitted from the foregoing notice, but more than enough has been stated to show that keen disappointment over railway matters notwithstanding, Boundary Creek is still displaying much activity and vigorous enterprise.

Rossland Notes.

The transfer of the Homestake group of claims, was ratified at the meeting the several companies, so that we may expect operations to be resumed shortly, with every expectation of another producer in the near future.

Since the Monte Christo was taken over by the Colonna people, work has been energetically carried on, and some excellent results have been attained. Very little ore is being taken out, however, as it is the intention of the management to follow out the policy of the Centre Star and develop the ground thoroughly before beginning to stope or ship.

The control of the Evening Star mine, which lies above the Monte Christo and Colonna, on the summit of Monte Christo mountain, has passed into the hands of an eastern company. H. B. Nichols, has been appointed manager, and the work is being carried on energetically.

Recent developments in the Columbia and Kootenay have been very gratifying. An ore chute over twenty feet wide has been opened and very practical evidence of the improvement of the property shown by the increase of the shipment from thirty to forty tons per week to 180 tons per week. There is every reason to hope that the next few months' work will make this mine one of the largest shippers in the camp.

Trail Items.

Some excellent work has been on the Little Giant group owned by the Canadian Mutual Mining and Milling Company of Toronto. Besides the big copper ledge on which the first work was done recent prospecting of the ground has uncovered a fine ledge of arsenical iron which returns good values. Work is being continued vigorously and it now looks as if the latest comers would be among the first to produce results.

Work has been resumed on the Norway, the Bruce Company's claim some half a mile below Trail. The tunnel is now in 119 feet and will be continued to 135 when a cross-cut will be run to cut a parallel ledge that outcrops about forty feet away. The company expect to put a power-plant on the ground in a short time.

An unusually good showing has been discovered on the Bryan group in Waterloo. The group lies some two miles southwest of the famous Maud S. It is reported that the property has been bonded for \$25,000.00, but this cannot be ascertained definitely.

The district around Waneta and the Pend d'Oreille continues to attract a great deal of attention. There appears to be a well-defined mineral belt running north-easterly from the Columbia River along the south side of the Pend d'Oreille to Fish Creek. The veins are mostly contact veins, and the average values are not high, but the ledges are of great size and the ore appears to be an excellent concentrating one.

LOWER CALIFORNIA.

The Piramide Mining Co., of this city, has secured a patent from the Mexican Government for the Bolivar claims at Alamo, owned by the Piramide Gold Mining and Milling Company, covering about 30 acres.

The above company is composed of John McCool, of Winchester, Riverside county; D. G. Mitchell, Bradford Morse, Sheriff Johnson, W. D. Devana, J. O. Brown, of Riverside, and P. L. Griffen, of Los Angeles. Besides what the company has obtained patents for, they own what is called the "Piramide Claims," covering about 500 acres, for which they have not yet received a patent.

These are all placer claims and are known to be quite rich. A pumping plant and several hundred feet of pipe, which has been stored at Los Angeles, will be sent down at once and work commenced on the claims for which the patent has been received. Heretofore these claims have been worked to some extent by Indians, the dirt having to be packed or hauled several miles to water, and by this mode, including the other crude measures used in mining, good wages were made. The company has developed water, which, by pumping over a hill from sixty-five to seventy feet high, can be delivered on the claims. They have a flow of fifty inches of water now, with a prospect of greater development. The pumping plant is for getting the water over this hill.

The Los Angeles *Evening Express* has established a mining department, and will devote from two and one-half to three columns to the mining industry of Southern California and other sections, and will give the latest mining notes and stock quotations. The *Express* is one of the large daily papers that has made a reduction in their subscription price. From September 1st, the price will be 10 cents, per week by carriers, and 2 cents per copy from the newsboys.



Wm. Ainsworth, of Denver, Colo., is now offering for sale a weight, as shown herewith of 294.6 milligrammes, which was suggested and first put into use by Mr. Charles F. Shelby, assistant chemist at the Globe Smelting and Refining Co.'s Works, at Globeville, Colo., and which is coming into general use very rapidly.

Its use is to facilitate the present volumetric method of managanese determinations, where the titration is done with the standard 1 per cent permanganate solution for iron.

By taking this amount of ore, we read our final results from the burette, 1 C. C. equals 1 per cent; thereby saving all further calculations and reducing the liability of mistakes to a minimum. These weights are made of platinum, and the weight is guaranteed by the maker.

Further particulars regarding this weight can be obtained from Wm. Ainsworth, of Denver, Colorado.

The Colorado Iron Works Company, of Denver, Colorado, reports the following shipments for the last two weeks: One carload of mining machinery to the Midnight Mining Company of Vasquez, New Mexico; one carload of mining machinery to Kilton Ore Purchasing Co., of Goldfields, Colo.; one five-stamp mill complete to L. A. Martinez, of Guaymas, Mexico; two special mining cars, to Creston-Colorado Co., of Minas Prietas, Sonora, Mexico; one large Elliptical Bowl slag truck, to Puget Sound Reduction Company, of Everett, Wash.

GENERAL NEWS.

Trans-Mississippi and International Exposition.

OMAHA, JUNE TO NOVEMBER, 1898.

The perspective drawing accompanying this article of the Mines and Mining building shows a handsome structure, designed by John J. Humphreys along rigid classic lines of the Doric order, modified to comport with nineteenth century requirements.

The facade presents a frontage of 400 feet, accentuated at center and end with pavilions, sixty-four and forty feet respectively, thereby obtaining sufficient variety of mass. The solidity of these pavilions and their strong perpendicular lines and shadows will give a strong contrast of light and shade.

The height of the building to the top of the main cornice is forty feet; the height of order thirty feet, resting on stylobate ten feet high. The height of the center pavilion to the top

PERSONAL NEWS ITEMS

A. S. CONGDON, a mining man of Butte, Montana, was one of the callers at the JOURNAL office the 14th inst.

Mr. LONERGAN, of Loneragan & Calkins, is in Nevada examining properties.

EX-GOV. HANSEN, who recently returned from New York to Helena, Montana, announces that while in the east he made arrangements for putting up a Peck machine to work over the tailings at the East Helena smelter.

RICHARD CROW, who has a lease on the Wilson property, is working several men on the same.

L. E. AUDURY, M. E., of San Diego, Cal., spent last week in Los Angeles attending the meeting of the Native Sons of California.

BRITTON DAVIS of Corraitos, Chihuahua, Mexico, just came into El Paso, Texas, and reports a rich strike at the Corraitos mines.

E. L. SHAFNER, president of the Gold Coin Mining Company, accompanied by some Cleveland stockholders, made a visit to the mine near Butte, Mont.

JACK WILSON of Kingman, Ariz., will leave very shortly for the Alaska gold fields.

JOHN V. COLE of Rossland, B. C., superintendent of the White Bear mine, has been on a visit to the eastern states and provinces.

Geo. R. BROWN of the Copper Queen Co., at Cooney, New Mexico, was one of the visitors at Silver City, Sept 10th.

H. L. WREED, president of the Spokane and South Mountain Mining and Smelting Company, of Spokane, Wash., was a recent visitor in San Francisco.

H. L. JONES, formerly of Randsburg, has returned from a trip to British Columbia. He visited the Trinity county strike, on his way back.

PROF. GEO. C. TILDEN formerly of the School of Mines at Golden, Colorado, was in San Francisco the fore part of this month from New Zealand, where he has been professional business.

W. H. PARKER, owner of a large low grade proposition near Randsburg is in Los Angeles securing machinery and supplies for his mines.

R. S. KNIGHT was in Silver City, New Mexico, from the lower Gila. Mr. Knight has recently discovered rich lead-silver ore in an old abandoned mine at Telegraph in Grant county, N. M.

FRANK C. EARLE, the El Paso agent of the Kansas City Consolidated Smelting and Refining Company of Argentine, Kansas, has been visiting Randsburg, Cal., in the interests of his firm in view of erecting a sampling works at that point.



MINES AND MINING BUILDING AT OMAHA

of the crowning group of statuary is eighty-five feet, while the end pavilion is sixty-five feet to the top of the dome.

The lighting of the building will be obtained by large windows, ten feet wide by twenty-four feet high, placed at intervals of sixteen feet, and the roof will have a large skylight area, making the interior very bright and cheerful.

The center entrance is twenty-four feet wide by thirty-four feet high, and will be very rich in decoration, flanked on either side by coupled columns and their accompanying pilasters, standing six feet from the walls. The main cornice breaks around a projection of columns, supporting pedestals for groups of statuary twelve feet high. The center of the pavilion is crowned by a colossal group of statuary. There will be also single statues between columns, resting on stylobate, which will be projected out to receive them. The spandrels above the arch will be decorated with bas-reliefs. The end pavilions with their entrances will be crowned with shallow domes.

FRED LEONARD of Mineral Park, Ariz., expects to leave for Klondyke in the near future.

S. MARCHESCAU has returned to Butte, Mont., from the east, and reports the mines on the Atlantic sea board suffering more from the fall in the price of silver than the western mines.

J. E. BUSH of San Jacinto, Riverside county, Cal., left for the Klondyke gold fields a few days ago.

Geo. R. SUTHERLAND is working two men on the old Crook mine at Crook's canyon, Arizona.

TAYLOR D. MAC LEOD of Yuma has sold his group of gold mines to Colorado people and will superintend the development of the property himself.

H. R. McCULLOUGH, representing the Sterling Company of Chicago, was in Butte, Mont., last week.

M. G. BURNS of Pasadena, Cal. has put two men at work on the group of gold claims recently bonded by him in Copper Basin, Arizona.

T. A. RICKARD, M. E., of Denver, Colo., author of "Stamp Milling of Gold Ores," has left for Australia, N. S. W., whither he has gone on professional work.

HERMANN THOFKERN, expert in electrolysis of metals, has returned to Montana from a trip to New York. He will resume his duties as consulting engineer of several properties.

P. J. DONOVAN, the well known mining engineer of the Fort Steele district, B. C., was one of Butte, Montana's, notable visitors last week.

W. S. HOPKINELL, a prominent citizen of Hillsboro, N. M., has recently been in Silver City.

E. W. MELLARKRY, a former superintendent of the famous Golden Cross mine at Hedges, San Diego county, Cal., was a caller at the JOURNAL office the other day.

P. E. KEARNEY, president of the Gold Bug Mining and Milling Company, has gone to Randsburg, Cal., to look after the mining property of his firm.

H. D. SMITH, one of the directors of the Gold Bug Mining Company, has gone to Randsburg, Cal.

JO WILLIAMS of Pinos Altos, expects to come to California in the near future on a prospecting trip through our rich gold fields.

Obituary.

GEN. ORLANDO EVANS, one of the best known men in Nevada, died at Reno, Nev., recently, after a brief illness. General Evans came to California in 1840, was a successful miner in Nevada county, Cal., owning and selling to an English company the celebrated Buckeye Hill mine, near North San Juan. He was one of the original owners of the Gould & Currie mine at Virginia, Nevada.

THE MARKETS.

NEW YORK, Sept. 11th.

The following are the Silver, Copper and Lead quotations for the last two weeks

	SILVER.	COPPER.	LEAD.
Sept. 7	51 1/2	10 25	8 85
" 8	51 1/2	10 75	8 85
" 9	52	11 00	8 90
" 10	52 1/2	11 00	8 85
" 11	54 1/2	11 10	8 85
" 12	53	11 10	4 00
" 13	53 1/2	11 25	4 00
" 14	53 1/2	11 12 1/2	4 30
" 15	53 1/2	11 12 1/2	4 30
" 16	53 1/2	11 20	4 40
" 17	53 1/2	11 20	4 40

The silver market made a new record last week, spot silver selling at 51 1/2c., owing to the continuance of same conditions in the London market of scant demand and pressure of sales.

The closing, Thursday, Sept. 9, however, was strong on Mint orders in London, spot silver selling at New York at 52 1/2c.

London writes under date of August 23d: "There has been a moderate enquiry for shipment to the East, but sales of the metal in the Indian bazaars have been a good deal restricted, owing to the fear of an increased import duty being imposed upon the metal. The future of the market is most uncertain, and no permanent rise of importance seems probable without a decreased production."

COPPER.

The market has been very steady. The volume of business continues to improve and prices have a tendency to advance.

Lake copper is quoted in New York at 11 1/4@11 3/4c.; electrolytic copper in cakes, wirebars or ingots at 10 1/2@11c.; cathodes at 10 1/2@10 3/4c.; and casting copper at 10 1/2c.

The statistics for the second half of August show a decrease in the visible supplies of 300 tons.

LEAD

Has been very active, the price having advanced to 4.40c., with offerings very limited indeed. Manufacturers are buying very cautiously and it is thanks to this policy that the market has not advanced more rapidly.

Arrivals of lead at the port of New York during August are reported at 4,150 tons, all from Mexico. The exports of Mexican lead in bond from this

port for the month were 2,829 tons to Europe and 11 tons to Canada. The bonded stock at N. Y. and nearby ports amounted to 2,566 tons on July 31st, and to 3,191 tons on August 31st. During August there were entered and withdrawn for consumption 680 tons.

SILVER.

Is somewhat easier, the metal being now freely offered at 4.05c. at East St. Louis, with buyers not better than 4 1/2c. Production is steadily on the increase and even if consumption should improve during the next six months, which is not likely, it will certainly not be to such an extent as to absorb the increase in the output, which sooner or later will have to be exported.

ANTIMONY.

The quotations are unchanged at 8c. for Cookson's; 7 1/2c. for Hallett's; 7 1/2c. for Japanese and 7 1/2c. for U. S. Star.

NICKEL.

Business continues quiet, and no change in prices can be reported. New York quotations for ton lots are 33 1/2c. and 36c. per pound and for smaller orders 35 1/2c. and 38c.

TIN

Is declining in demand, and the premium on spot has entirely disappeared. The market price on spot has entirely disappeared. The market price is now 13c.

Were it not for the renewed decline in silver, prices for tin would undoubtedly have improved, the statistics at the end of August again showing an improvement of 800 tons. Under different conditions for silver, this would without doubt have had a very favorable influence on values.

The shipments of tin from Australia and the Straits in August are estimated at 4,600 long tons, and the deliveries for the month at 5,095 tons. The visible supplies on September 1st were as follows, in tons of 2,240 lbs.

	In store	Afloat	Total
London	17,374	2,290	19,664
India and	1,474	1,725	3,199
O. S. excl. Pac. ports	2,139	3,965	6,104
Totals	20,987	7,975	28,962

The total supply shows a decrease of 820 long tons from August 1st, and of 2018 tons as compared with September 1st, 1896.

PLATINUM.

Prices are firm at \$14 and \$15 per oz., New York. For chemical ware, best hammered metal, Messrs. Bimer & Amend of New York furnish the follow-

ing quotations, the prices given below being respectively for orders of over 250 grams; for orders of over 100 and less than 250 grams and for orders of less than 100 grams. Crucibles and dishes, 54c., 55c. and 56c. per gram. Wire and foil are 52c., 53c. and 54c. per gram.

QUICKSILVER.

The New York quotation is \$38 50 per flask. San Francisco quotations are \$38 for domestic consumption. The market is unchanged.

POWDER.

The San Francisco market is firm and is quoted as follows: For Hercules No. 1, from 11 1/4c. to 17 1/4c., according to strength and quantity. No. 2, from 9c. to 11c., according to strength and quantity.

COKE.

The market is quoted as follows at San Francisco:

Best on park	9 30	@	—
English, to load	10 00	@	—
" spot, in bulk	10 00	@	—
" in sacks	11 00	@	12 00
Cumberland	11 00	@	—

BORAX.

The San Francisco market is steady. The market is quoted as follows:

Refined, in carload lots, in barrels	6
Refined, in carload lots in sacks	1 1/2
Concentrated, in car lots	4 1/2

THE MINOR METALS.

Quotations are given below for New York delivery

Aluminum	
No. 1, 98 per cent. Ingots, per lb.	37 1/2@42c
No. 2, 94 " " "	31 1/2@36c
Ingots, scrap per lb	45c up
Rolls, scrap, " "	45c up
Alum. Nickel	45c up
Bismuth, per lb	\$1 30@1 80
Phosphorus, per lb	50@55c
Tungstic acid, per lb	75c
Tungstic acid, 50 per cent	45c
Pero-tungsten, 50 per cent	60c

Chemicals.

The market in New York is very firm, although as yet the slight extra demand for heavy chemicals has had no effect upon prices which remain the same in every substance as they were last week. Quotations generally are as follows:

CAUSTIC SODA.

60 per cent., \$2.22 1/2 @ \$2.42 1/2. 70 and 76 per cent., \$2 @ \$2.25 per 100 lbs.

ALKALI.

Domestic, 58 per cent., 60c. for 50 ton lots and over and 70c. and 80c. for smaller quantities. 48 per cent., \$1.00 and \$1.20 for jobbing lots.

CARBONATED SODA ASH.

48 per cent., 90c. and 95c. per 100 lbs. 58 per cent., 75c. and 80c. per 100 lbs.

CARBONATE OF SODA

English, 19c. and 2c. per lb. American, bulk \$1 50 and \$3.50 per 100 lbs., according to brand.

SAL SODA.

English, 75c. and 80c. per 100 lbs. American, 65c. and 70c. per 100 lbs.

CHLORATE OF POTASH.

\$9.50 and \$10 00 per 100 lbs.

ACIDS

The acid market is showing every symptom of the usual autumn revival and before long a very encouraging demand is expected.

Prices are per 100 lbs. in New York and vicinity in lots of 50 carboys or over. Quotations are as follows: Acetic acid, commercial No. 8 (in barrels), \$1 40 @ \$1.50; in carboys, \$1.50 @ \$1.65; redistilled, 24 per cent., in barrels, \$1.70 @ \$1.80; in carboys, \$1.90 @ \$2.05. Muriatic acid, 18°, 75°@85c., 20° 85°@95c.; 22°, \$1.15 @ \$1.25, according to make and quantity. Nitric acid, 36° \$3 50 @ \$4.00; 42°, \$4.50 @ \$5 50. Oxalic acid, \$7 ex-dock and \$7.25 ex-store. Mixed acids, according to mixture. Sulphuric acid, 66°, 85c. @ \$1 in carload lots, 100° 15c. higher for small quantities. Chamber acid, \$6 @ \$6 50 per ton at factory. Blue Vitriol, \$3 62 @ \$3 75 according to grade and order.

BRIMSTONE

The demand is now very light, and prices are hardly likely to stiffen. Steamers are scarce and freights are high. The steamer *Abbasia* arrived during the week with 1,500 tons. Sulphur is quoted at \$20.30 for the best unmixed seconds, and \$19.30 for best unmixed thirds. Spot in these grades is \$21 and \$20.

NITRATE OF POTASH

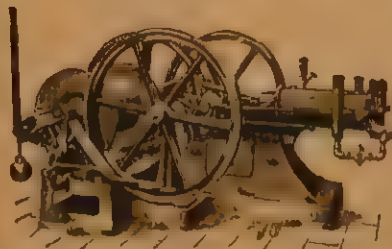
We quote New York and Boston, 1.75 @ \$1.78c. Philadelphia and Norfolk, 1.70 @ \$1.75c.; Charleston, Savannah, Wilmington and New Orleans, for 80° 85 per cent. basis of 80 per cent., 1.70 @ \$1.81c. in lots of 50 tons and upward.

NITRATE OF SODA

The market for this chemical may be summarized as: supply, heavy; demand light, yet prices have not weakened much if anything. We quote \$1 85 per 100 lb. bags, spot. This price has been shaded for large lots from vessels now discharging. The reported total loss of large steamer cargo has had no effect on prices, owing to the stock being so large and the demand so light.

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Gold and Silver Exports and Imports

At all the United States Ports, July, 1897 and years from January 1st, 1897, and 1896

Year	Coin and Bullion		In Ores	
	Exports	Imports	Exports	Imports
1897	15,655,111	\$50,147	\$ 75	\$453,241
1896	30,462,123	4,604,095	95,949	2,757,029
1895	54,844,692	26,672,525	79,255	539,974

The statement includes the exports and imports at all United States ports, the figures being furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York.

For the week ending September 3d, 1897, and for years from January 1st, 1897, 1896, 1895, 1894:

Period	Gold		Silver	
	Exports	Imports	Exports	Imports
Week	\$50,038	\$465,649	\$52,686	
1897	\$8,059,646	4,074,131	27,203,200	1,514,710
1896	40,376,749	23,572,185	20,602,684	1,911,541
1895	46,310,328	25,674,149	27,070,440	1,306,725
1894	82,427,435	13,912,998	24,557,825	1,150,629

No gold was exported this week; of the silver \$780 went to South America and the balance to London. The gold and silver imported came chiefly from Central America and the West Indies.

The United States Assay Office in New York reports the total receipts of silver at 86,000 oz. for the week.

FINANCIAL NOTES.

The Secretary of State for India, in Council, gives notice that the sale of bills of exchange on Calcutta, Bombay and Madras has been suspended for at least ten weeks. This action is due to the poor financial condition of the country. The opinion exists in banking circles in London that gold will be shipped to India when business revives.

The coinage executed at the Mints of the United States during August and the eight months of 1897 is reported to the Treasury Department as follows:

Denominations	AUGUST.		Value
	Pieces		
Gold	816,100		\$4,756,250
Silver	5,034,872		761,416
Minor	1,205,000		98,010
Totals	8,054,972		\$5,555,676

RIGHT MONTHS.

Denominations	Pieces	Value
Gold	1,008,668	\$5,000,167.50
Silver	16,170,498	1,055,411.36
Minor	3,011,171	749,009.98
Totals	57,834,440	\$6,804,588.84

The statement of the United States Treasury, on Thursday, September 2d, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date last week:

	August 26	September 2
Gold	\$111,257,127	\$134,841,127
Silver	\$5,084,241	\$4,811,571
Legal tender	\$2,371,479	\$2,384,411
Bank notes		
etc.	\$1,122,105	\$9,410,555
Totals	\$122,034,952	\$151,537,664

Treasury deposits with national banks amounted to \$16,982,257, a decrease of \$230,728 during the week.

A late telegram from Denver says The receipts of gold at the United States branch mint in this city for the fiscal month of August, which closed Saturday, amounted to \$1,215,237. The receipts for August, 1896, were \$329,459 an increase for this year of \$885,771, or 300 per cent. The total receipts this year since January 1st amount to \$7,238,722. It is estimated that the amount of gold received at the mint during 1897 would be in the neighborhood of \$11,000,000, and with the amount shipped East from smelters and chlorination works it is believed Colorado's output for 1897 will be in the neighborhood of \$20,000,000.

MINING STOCK MARKETS.

LOS ANGELES, CAL. Sept. 14, 1897.

Market on the Los Angeles Mining and Stock Exchange has been a good one for this period of the year. It must be remembered that the Exchange is at present passing through the dull season; the summer heat has not entirely left us, and the fall coolness is of the intermittent nature, therefore investors and speculators are still more or less out of the city, and those that are here are waiting for further development in the properties before taking in any of the large holdings.

The principal feature has been the spurt in East Amargosa; this stock rose from \$9.00 a thousand to 2½ cents per share on one day's call and the prettiest flurry yet experienced on the Exchange was a consequence.

The call-room is crowded every morning at the call and it is certain that the public is becoming aroused to the good

chances offered for investment on the Exchange. Rand Mountain, after selling down as low as 1½, has strengthened up to 2½ and it closed firm at that figure. Maggaretta is especially strong at 2½ with good trading. Pacific Consolidated remains inactive and is inclined to sag. This stock will, however, undoubtedly surprise everyone in a short time. Reports from the property indicate that they will cut their first big vein in about a week, tunnel being in very close to 300 feet.

Among the unlisted stocks Old Dominion has been the feature with good trading and spirited bidding, on every day's call. This stock was put on at two cents and is now selling at 2½. Some of the finest ore yet exhibited on the Exchange was taken from this property recently. Mohawk-Action, another good prospect, has also been an active trader. It is being worked steadily and the new ground is showing up well. The balance of the list has developed no new features but continues strong and healthy.

NEW YORK, Sept. 8, 1897.

Although speculation in the New York mining stock market was fairly active, the trading, is still confined to a few stocks. On the Consolidated Stock and Petroleum Exchange the Comstocks were firmer, compared with last week, and several advances were recorded. The Colorado stocks, especially those of the Cripple Creek group, fluctuated to some extent. The silver stocks continue to be depressed in consequence of the falling price of the metal. The California securities were very quiet.

The most active stock on this Exchange is Fortuna, which is quoted at \$10.62 to \$11.25 per share.

The Mining Exchange is doing a moderate business, which is confined principally to a few Colorado stocks, such as Rocky Mountain, Annetta and Miami. The chairman of this board is in the habit of calling the Cripple Creek stocks, and although bids are made there is little or no buying in this direction.

SAN FRANCISCO, Sept. 10, 1897.

The market on the Exchange took a decided advance the past week. Savage advanced from 25c. to 76c. The Gould and Currie was quite a feature. Occidental also advanced to \$2.75 a share and then took a slight decline. Development work is being steadily pushed ahead on a new body of ore at the 650

foot level, in the Occidental, which is said to be 30 feet wide and averaging \$20 per ton. It is confidently expected that the mill will be started crushing ore in the near future.

The Yellow Jacket and other Comstock mines remain about the same as in the past few weeks. The Consolidated Virginia stocks are holding their own. Very encouraging reports come from the mine. They have commenced operations on the 1750 foot level. At present they are working to connect with the 1650 foot level. Reports have been received of crosscuts having been started on the Utah, but nothing authentic has been received. Union was rather dull, there being no change in the work reported. In Sierra Nevada considerable exploration work has been done on the Layton tunnel and the 900 foot level.

Mexican stock is at a standstill. There has been no change in the developments of the 1000 foot level worthy of attention.

The south drift on the central tunnel of Ophir is being pushed slowly ahead. Work is continued west on the 1000 foot level. At last advice the crosscut was in over 400 feet with no material change to note. Ophir stock is steady; no change from last week's figures. The Gould & Currie and Best & Belcher are crossdrifting toward the Brunswick lode in conjunction and have their drift in over 615 feet with expectations of striking the lode in the near future.

Reports are current that important work is to be started in Andes, but official letters do not indicate it. The news from Con. Imperial, Challenge and Confidence is about the same as published last week. From Yellow Jacket nothing has come to hand to indicate what they want assessment money for. There is nothing new from Kentuck, Crown Point, Belcher, Seg. Belcher or Overman.

SALT LAKE CITY, Sept. 9, 1897.

The mining stock market reacted this week and for the first time in sixty days closed stronger than the opening.

Ajax has resumed work in a comparatively small way, but full operations will shortly be in order.

The stock was somewhat stronger and in fair demand. Steady operations continue at the Anchor, and some inquiry was made for the stock. A meeting of the Bullion-Beck directors is scheduled for September 10.

Better quotations prevailed on Cen-



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tennial Bureka, although the inquiry was generally for small blocks. At the properties a very satisfactory condition exists. Company brokers are keeping Chloride Point well up. Fair progress is being made on the mill construction. Daily sold at higher prices than ruled last week.

Daley West was inactive. Very little was done in Dexter, and prices were only fairly firm. At the Dalton development work continues and the showing is encouraging. Dalton and Lark was quiet. Some development work is being done at the Eagle, but the stock remained without special activity.

A strong and continuous demand for Geyser-Marion by both inside and outside investors made much better prices and the close was firm. The next dividend is scheduled to come on September 30th.

Galena was in better demand. Horn Silver is working away steadily and doing well. No special change occurred in Lower Mammoth. Little Pittsburg was quiet at last week's prices. There was increased inquiry for Mammoth and at the close offerings were light. The mill is reported to be giving better results. Mercur was stronger and in fair demand and the September dividend was declared this afternoon. Northern Light did not advance. Ontario continued quiet with only light inquiry and also light offerings. Somewhat lower figures were made in Omaha.

The usual monthly dividend of 25 cents per share will be paid by the Silver King Sept. 10. It is not likely that Swansea will pay any dividend this month, but South Swansea may yet come in with a payment. Both of the stocks were stronger. Sacramento did considerable business at somewhat better

prices. Operations will be resumed at the Sunshine. Sunbeam was not very active. Utah was slightly stronger. There is but little of the stock being offered under the one dollar mark.

ROSSLAND, B. C., Sept. 8, 1907.

The stock market continues practically dead, and while this is causing a good deal of dissatisfaction in many quarters, it is having a good effect by causing more work to be done in the mines and less on paper. As a consequence there is more honest development work being done now than at any other time, with the result that Rossland is continuing to hold the attention of the sound mining operators of the great financial centres of the world. The interest of the English market continues to increase and is being watched carefully, the more so the more fully it is realized that the stage of three per cent shares is over and that the English market presents the soundest, surest, and indeed, the only source from which we can hope to obtain the capital needed for the proper development of the mines in this section.

MINING STOCK QUOTATIONS

NORTHERN	
Aetna Con	Humboldt
Allouez	Illinois Steel
Anaconda	Kearney
Arnold	Lake Sup Iron
Atlantic	Merced
Bonanza	Napa Cons
Boston and C	National
Boston & Mont	Old Dominion
Butte & Boston	Orecoila
Calumet & Hecla	Pioneer
Catalpa	Quincy
Centennial	Ridge
Central	San Ysaabel
Dominion Conl.	Tamarack Jr.
Dominion Pref	Tamarack
Franklin	Tucuman
Gold Coin	Wolverine

HELENA, MONTANA

Am Den & M Co	Granite Mount
Bald Butte	Hope
Benton Group	Iron Mountain
Bl-Metallic	Moulton
Combination	Potosi

LOS ANGELES, CAL.

Armstrong	Mohawk Action
Brown Duke	Old Dominion
Cavill	Pacific Con
East Armstrong	Portland
Gold Bug	Rand Mt
Ivy Group	Run Dance
Little Butte	Sunset
Lucky Star	Val Verde
Magganetta	Wedge

SAN FRANCISCO.

Alpha	Exchequer
Alta Con	Gould & Curry
Andes	Hale & Norcross
Bellier	Justice
Best & Belcher	Mex Can
Bodie	Ophir
Bullion	Overman
Challenge	Potosi
Chollar	Savage
Confidence	Sierra Nevada
Con. Cal. & Va.	Union Con
Con New York	Utah
Crown Point	Yellow Jacket

SALT LAKE CITY

Ajax	Lucky Hill
Alliance	Malvern
Anchor	Mammoth
Bogaz	Maxfield
Buckeye	Mercur
Bull. Beck	Morgan
Cent Bureka	Northern Light
Chloride Point	Omaha
Dalton	Ontario
Daily	Ovulind
Daly West	Richmond Anaconda
Dillon & Lark	Rover
Dexter	Sacramento
Eagle	Silver King
East Golden Gate	Silver Con
Eureka Hill	Sunbeam
Four Aces	Sunshine
Galena	Swansea
Gemini	So Swansea
Geyser-Marion	Tetro
Horn Silver	Utah
Little Pittsburg	Utah Con
Lower Mam	

ROSSLAND, BRITISH COLUMBIA

Alberta	Josie
B. C. Gold King	Junio
Beaver	Knight Templar
Big Three	Kootenay London
Bluebird	Le Roi
Brace	Lilly May
Butte	Mayflower
Caledonia Con	Monita
California	Monte Christo
Camp Bird	Morning Star
Celtic Queen	Near Egg
Colonna	Northern Belle
Commander	Novelty
Deer Park	O. K.
Della Colla	Palo Alto
Delaware	Phoenix
Eastern Star	Poorman
Enterprise	R. E. Lee
Eric	Red Mount View
Evening Star	Red Point
Georgia	Rossland, Red Mt.
Gratitude	St. Elmo
Golden Drip	St. Paul
Great Western	Silverina
Hartle Brown	So Cross & W. Con
Helen	Virginia
High Ore	West Le Roi
Imperial	White Bear
Iron Horse	
Iron Mask	
L. X. L.	

COLORADO SPRINGS STOCKS

Aetna	Ironclad
Alamo	Isabella
Anaconda	Isabella Stamp
Argentine	Jack Pot
Banquo	Jefferson
Banks	Keystone
Ben Hur	Maton
C. C. & N	Mollie Gibson
C. C. & Manitou	Monarch
Creede & C. C.	Mount Rose
Crocker	Onole
C. C. Consolidated	Orphan Bell
Des Moines	Pharmacist
Fannie Rawlins	Portland
Favorite	Peoples
Franklin	Sacramento
Golden Eagle	Specimen
Golden Pledge	Star of the West
Gold & Globe	Trachyte
Gold Standard	Union Gold
Humboldt	Virginia M.
Ingham C	Work
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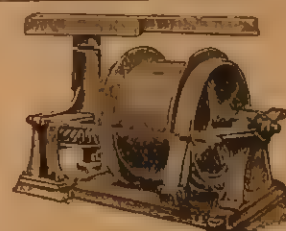
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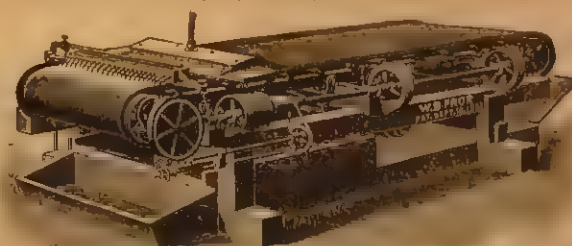
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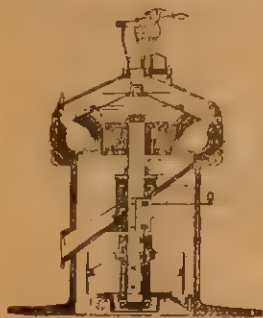
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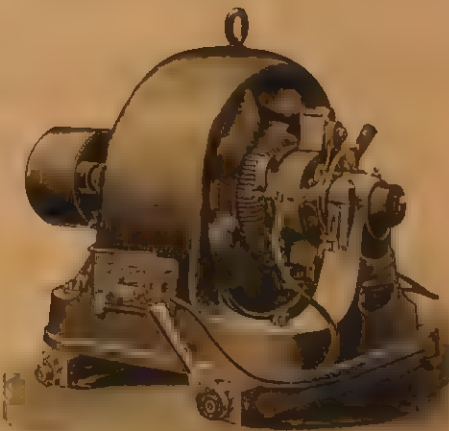
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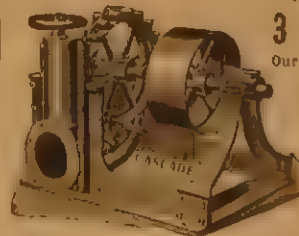
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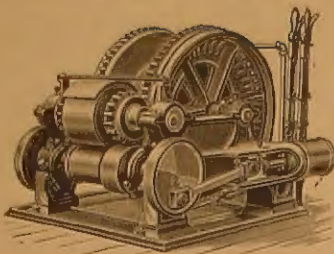
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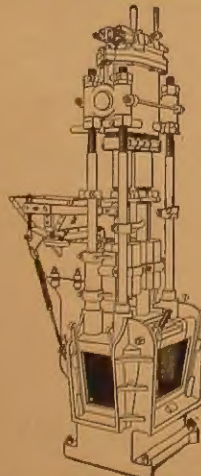
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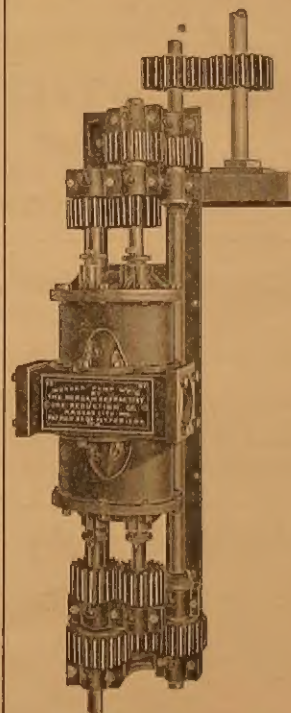
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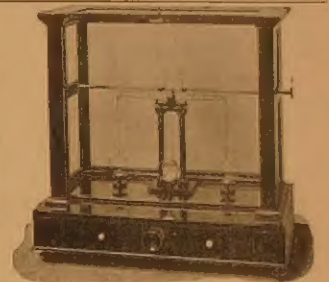
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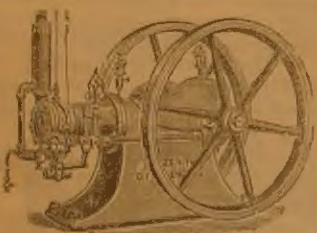
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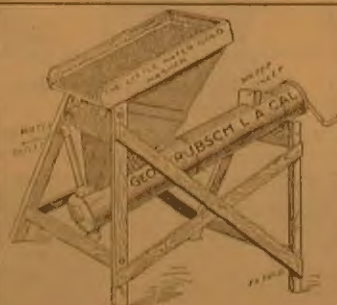
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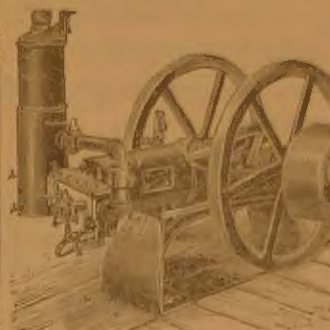
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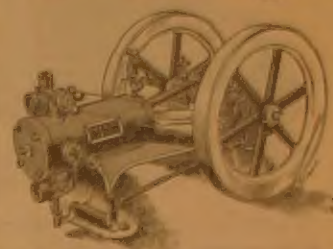
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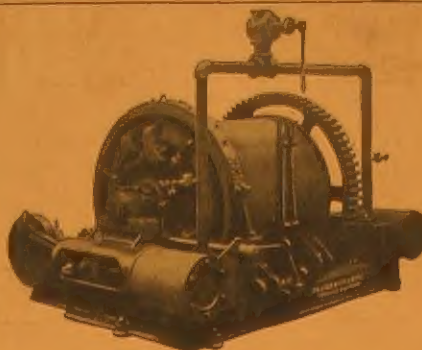
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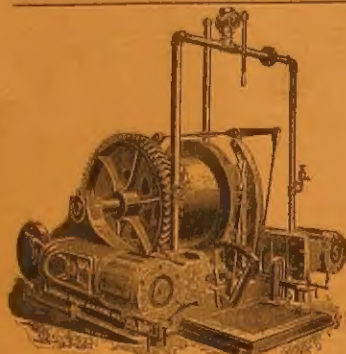
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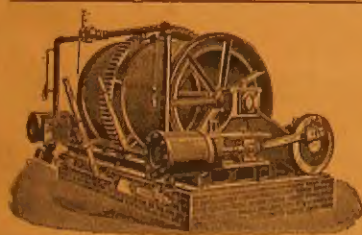
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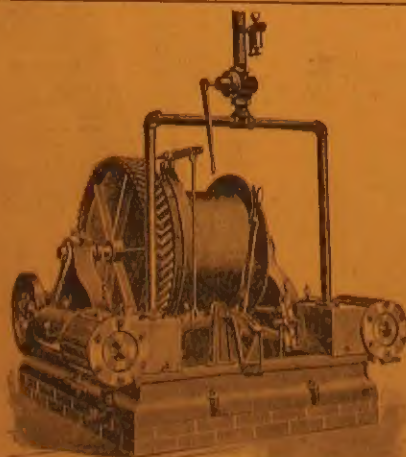
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